



Reframing criminal profiling: a guide for integrated practice

Wayne Petherick^a  and Nathan Brooks^b 

^a*Criminology Department, Faculty of Society and Design, Bond University, Gold Coast, QLD, Australia;* ^b*School of Health, Medical and Applied Sciences, Central Queensland University, Townsville, QLD, Australia*

Profiling aims to identify the major personality and behavioural characteristics of offenders from their interactions in the crime. The discipline has undergone numerous changes and advances since its first modern use by the psychological/psychiatric community. The current paper reviews the different approaches to criminal profiling, exploring the reasoning and justification utilised across profiling practices. Profiling aims to assist criminal investigators; however, the variance in profiling approaches has contributed to inconsistency across the field, bringing the utility of profiling into question. To address the current areas of practice deficit in criminal profiling, a framework is proposed to promote integrated practice. The CRIME approach provides a framework (consisting of crime scene evaluations, relevancy of research, investigative or clinical opinions, methods of investigation, and evaluation) to promote structure and uniformity in profile development, aiming to assist in the reliability of the practice by providing an integrative framework for developing profiles.

Key words: crime investigation; criminal profiling; offender profiling; psychological profiling; serial crime.

In its most basic form, criminal profiling (also known as offender profiling and behavioural profiling, among others) is an investigative tool to discern offender characteristics from behaviour. This base understanding is common to most, if not all, approaches to profiling, with the main difference between practices being the reasoning and decision-making processes used to arrive at the final profile (Petherick, 2014a, 2014b). Despite the level of scientific reasoning being notably different across the approaches, there has been little attempt to understand what this reasoning is and how it impacts on profile content. Profiling has been subject to discrepancies across practice, with a dearth of processes or

principles to promote integrated practice. There have, however, been many attempts to understand more advanced aspects of profiling such as the accuracy of one group over another (Kocsis et al., 2000; Pinizzotto & Finkel, 1990), or the assistance offered by profilers to end consumers (Cole & Brown, 2011; Copson, 1995), mental health professional's attitudes to profiling (Torres et al., 2006) and the operational utility of offender profiling (Gekoski & Gray, 2011).

Criminal profiling details the characteristics of the likely perpetrator of a given crime. Far from having an abstract relationship to criminal profiling, logic is pivotal to constructing rational and robust arguments about

Correspondence: Nathan Brooks, School of Health, Medical and Applied Sciences, Central Queensland University, 538 Flinders Street, Townsville, QLD, Australia. Email: n.brooks@cqu.edu.au

offender characteristics, not only in the profile itself but also in the communication of the elements of the profile to consumers. Indeed, devoid of any logical process, conclusions about the offender remain nothing more than unfounded assumption or ill-informed guesswork. The type of logic reasoning employed by the profiler is the most fundamental difference between approaches, and it is critical to consider the different types of reasoning employed across profiling practices. Logic, the process of argumentation, is defined by Farber (1942, p. 41) as 'a unified discipline which investigates the structure and validity of ordered knowledge'. Further, according to Battacharyya (1958, p. 326):

Logic is usually defined as the science of valid thought. But as thought may mean either the act of thinking of the object of valid thought, we get two definitions of logic: logic as the science (1) of the act of valid thinking, or (2) of the objects of valid thinking.

Stock (2004, p. 8) adopts a different approach:

Logic may be declared to be both the science and the art of thinking. It is the art of thinking in the same sense that grammar is the art of speaking. Grammar is not in itself the right use of words, but a knowledge of it enables men to use words correctly. In the same way a knowledge of logic enables men to think correctly or at least to avoid incorrect thoughts. As an art, logic may be called the navigation of the sea of thought.

It is the purpose of logic to analyse the methods by which valid judgements are obtained in any science or discourse, which is met by the formulation of general laws dictating the validity of judgements (Farber, 1942). More than simply providing a theoretical framework for structuring arguments, the basic principles of logic allow for a more rigorous formulation and testing of any argument. A better understanding of this theoretical

framework provides a better understanding of the processes employed by the profiler, as well as the discipline itself. Additionally, the difference in the ways that profiles are argued is of great practical importance (Goldsworthy, 2001, p. 30):

One important factor that should be considered is how acceptable the method of profiling is to those who will be using the profile. . . . Like any product, the profile must be end-user friendly. Few law enforcement personnel have qualifications in psychology or related disciplines, and it is this very fact that can make investigators dubious as to how conclusions presented in the profile were reached. For instance, a claim that a particular type of serial murderer will be 40 years old, white and a blue collar worker will be treated with derision by investigators unless it can be shown how that conclusion was reached, and further that the conclusion is likely to be true.

Goldsworthy argues two key points: first, that logic and reasoning should be employed in the construction of the profile, and, second, that the logic and reasoning employed be clearly elucidated throughout. While it should stand to reason that logic and reasoning should be used in profiling, we use the term in a more formal sense to move the process away from such idiosyncrasies as 'intuition' or 'common sense'.

There are primarily three types of logic used in developing profiles: induction, abduction and deduction. Rather than representing different types of logic, these are best thought of as different points along the logical continuum, beginning with various hypotheses about what may have occurred or that may be true (induction), and through the scientific method we falsify each conclusion until we are left with the best possible explanation (abduction) or only one that is based on universal laws or principles and cannot be falsified (deduction). Sometimes, because of the nature of human behaviour, evidence dynamics or active attempts to thwart the

investigation (referred to as staging, among others), we are left with the best explanation for the evidence we are observing – that is, abduction.

An inductive argument is where the conclusion is likely or a matter of probability based on supporting premises, such as physical evidence or research. While a good inductive argument provides strong support for the conclusion, the argument is still not infallible. For example, in research on behavioural consistency, Bateman and Salfati (2007) found that hiding the body occurred 67.8% of the time, and that moving the body after the homicide occurred in 61.1% of the time. While cited as high-frequency behaviours, these results suggest that each will only be found approximately two thirds of the time. As a result, investigators using a profile that reports such statistical inferences may equate probability with certainty. However, these behaviours occur in some cases and not others, raising an issue with both the utility of this information and in determining where offending behaviour is consistent and inconsistent with research. This may be especially true in cases where the level of certainty is communicated in a vague or general way, such as ‘most of the time the body will be hidden’. While technically true, this argument does not communicate the exact level of certainty.

Induction proceeds from a specific set of observations to a generalisation known as a premise, and the premise is a working assumption (Thornton, 1997). From observations in each case, comparisons are made to determine the level of similarity to past cases sharing similar features. These similarities provide generalisations that may then be offered as a conclusion in the current case. For example, a woman is found murdered, and a generalised conclusion is reached that the suspect is likely to be male, due to male offenders perpetrating between 85–90% of homicides (Federal Bureau of Investigation [FBI], 2002; Mouzou, 2005). The central premise in induction is similarity, where analysis of unlawful activity

reveals that criminal activity often has common features (Navarro & Schafer, 2003). The application of inductive logic where the similarity is drawn from research on criminal behavioural patterns can be appreciated through the following (Kocsis, 2001, p. 32):

To use this model to produce a psychological profile, behaviours from any of the [behaviour] patterns are compared and matched with those of the unsolved case. Once a behaviour pattern has been matched with the unsolved case it can be cross referenced with offender characteristics.

Abduction is a style of reasoning that could be summed up as reasoning to the best explanation (Davis et al., 2018). That is, the evidence in a case is more indicative of a single hypothesis from a number of possible hypotheses, though not inclusive of one to the exclusion of all others. According to Niiniluoto (1999) this type of reasoning has been the staple heuristic method of classical detective stories, and ‘the logic of the “deductions” of Sherlock Holmes is typically abductive’ (p. S441).

Deduction relies on induction, where hypotheses are drawn based on case similarities and are then tested against the evidence in the current case. Offender characteristics are arrived at through a systematic study of the patterns and themes present in the physical and behavioural evidence, where if the premise is true, the conclusion must also be true (Bevel & Gardner, 2008). Neblett (1985, p. 114) goes further, stating that ‘*if the conclusion is false, then at least one of the premises must be false*’. For this reason, when employing a deductive approach, it is incumbent on the profiler to establish the validity of each and every premise before drawing conclusions from them.

Because a deductive argument is structured so that the conclusion is implicitly contained within the premise unless the reasoning is invalid, the conclusion will follow as a matter of course. Put another way, a deductive

argument is designed to go from truth to truth. A deductive argument will therefore be valid if (Alexandra et al., 2002, p. 65):

- It is not logically possible for the conclusions to be false if the premises are true.
- The conclusions must be true, if the premises are true.
- It would be contradictory to assert the premises yet deny the conclusions.

In profiling, deduction relies upon the scientific method which is a 'reasoned step by step procedure involving observations and experimentation in problem solving' (Bevel, 2001, p. 154). Induction, abduction and deduction relying on the scientific method go hand-in-hand in criminal profiling: theories are developed based on research and experience (induction), which are then examined in light of the current case to determine which may or may not be true given the available evidence (abduction), and attempts are then made to falsify those that remain through hypothesis testing and revision (the scientific method that in ideal scenarios would lead to deduction). Only when theories have withstood this process of falsification can they be considered complete, and that a truth has been determined.

While there is no conclusive data on the commonality and occurrences of profiling practices, it would make reasoned sense to suggest that induction is the most common, given that many approaches rely on statistics or case experience in developing the final profile. Furthermore, induction is the foundation for both abduction and deduction. Owing to the nature of crime scenes and criminal behaviour and the lack of universal principle in human behaviour overall, deduction would be considered the least common type of reasoning, making abduction second by default. Although deduction is concerned with absolutes, abduction centres on probable reasoning derived through hypothesis testing. Hence, in abductive reasoning, conclusions are reached

without the reliance on a definitive cause, instead determined based on the likelihood, feasibility and practicality of a given hypothesis. According to Niiniluoto (1999), in consideration of Pierce's (1898) position on an abductive argument, the following is concluded (p. S439):

- The surprising fact C is observed.
- But if A were true, C would be a matter of course.
- Hence, there is reason to suspect that A is true.

The use of abductive reasoning is common practice in the clinical process of differential diagnosis, along with providing the underpinnings for crime assessment and profile development (Davis et al., 2018; Rainbow & Gregory, 2011). As Davis et al. (2018) observed, 'profilers should take time to argue against their opinions and consider alternate hypotheses (p. 187–206). Consequently, the current review intends to examine the reasoning and decision making employed across offender profiling. The major profiling practices are discussed, and the utility of these approaches explored. As noted by Fox and Farrington (2018), 'there appears to be substantial variation in what is considered to be OP [offender profiling], who is conducting it, the methodology and approach that is used, the findings that are achieved, as well as where and how the results are presented' (p. 1248). The significant differences amongst approaches to offender profiling, along with widespread disputes between practitioners, have greatly impeded the field (Fox et al., 2020). These limitations have caused scepticism about the investigative utility of profiling, along with the scientific efficacy of the practice (Fox et al., 2020). For offender profiling to have scientific validity and more widespread recognition in investigations and admissibility in court, a uniformed approach to practise remains essential (Fox & Farrington, 2018; Freckelton, 2008). The current review contends that for profiling to be

recognised as a scientific and evidence-based tool, homogeneity in practice must be achieved, best viewed through an integrative approach to offender profiling.

Profiling approaches

While there is considerable overlap between practitioners and how they approach the development of a profile, there are also significant differences. Whether these constitute enough to be considered different methodologies is currently a subject of debate, with some suggesting that differences are more about emphasis on various parts of the process (Davis et al., 2018).

Criminal investigative analysis

Owing to its depiction in film and television, perhaps the best known profiling approach would be that developed by the FBI. Criminal investigative analysis, or CIA, is inductive and abductive with its roots in early law enforcement attempts to understand patterns of criminal behaviour. Early CIA thinking allocated offenders to one of two types: The organised asocial and the disorganised nonsocial, with these terms first appearing in *The Lust Murderer* in 1980 (see Hazelwood & Douglas, 1980). Between 1979 and 1983, FBI agents interviewed offenders in federal custody (see Burgess & Ressler, 1985) to formalise this taxonomy and determine whether there were consistent features across offences that may be useful in classifying future offenders (Petherick, 2014a). At these early stages, the FBI method employed this organised/disorganised typology as a decision process model, which classifies offenders by virtue of the level of sophistication, planning and competence evident in the crime scene. According to the study's authors, 'the agents involved in profiling were able to classify murders as either organised or disorganised in the commission of their crimes' further noting that 'because this method of identifying offenders was based largely on a combination of

experience and intuition, it had its failures as well as its successes' (Burgess & Ressler, 1985, p. 3). Indeed, the study's two quantitative objectives were to first identify whether there are crime scene differences between organised and disorganised murderers and second to identify variables that may be useful in profiling sexual murderers for which organised and disorganised murderers differ. However, Douglas et al. (1986), acknowledged that profile development did not solely rely on a classification of organised or disorganised, explaining that profiles are derived through 'the classification of the crime, its organised/disorganised aspects, the offender's selection of a victim, strategies used to control the victim, the sequence of the crime, the staging (or not) of the crime, the offender's motivation for the crime and the crime scene dynamics' (p. 412).

An organised crime is one with evidence of planning, where the victim is a targeted stranger, where the crime scene reflects overall control, restraints are used, and there are aggressive acts prior to death. This suggests the offender is organised with the crime scene being a reflection of personality; they will generally be above average intelligence, be socially competent, prefer skilled work, have a high birth order, have a controlled mood during the crime, and are more likely to use alcohol (Douglas & Burgess, 1986; Ressler et al., 1992). Conversely, a disorganised crime shows spontaneity, where the victim or location is known, the crime scene is random and sloppy, there is sudden violence, minimal restraints are used, and there are sexual acts after death. This is again suggestive of the personality of the offender, with a disorganised offender being below average intelligence and socially inadequate, and having lower birth order, anxious mood during the crime and minimal use of alcohol or drugs (Douglas & Burgess, 1986; Ressler et al., 1992). Despite having discrete classifications, it is generally acknowledged that no one offender will fit so neatly into either type, with most being

categorised as ‘mixed’ – that is, having elements of both types. The FBI dichotomy has received criticism from some practitioners (Canter et al., 2004; Canter & Heritage, 1990; Canter & Youngs, 2003), and there have been limited empirical findings published by the FBI in relation to practice changes (Fox & Farrington, 2018). One exception to this was the study conducted by Morton et al. (2014), who observed that ‘Dichotomous typologies by their very nature have challenges, as an “either/or” choice, cannot possibly explain complex, multiple event human interactions’ (p. 5). Further to this, Morton and colleagues suggested that profiling should serve as a tool that provides law enforcement investigators with investigative information, rather than providing classifications from predetermined categories or cumbersome typologies.

Diagnostic evaluations

Diagnostic evaluations do not represent a single profiling method *per se* but are instead a generic description of the services offered by mental health professionals, and largely rely on clinical judgement (Bradley, 2003). The profile provided by psychiatrist Dr James Brussel in 1956 to assist in the ‘Mad Bomber’ case is by far the most famous example of this approach to profiling (Brussel, 1968). In the early stages of profiling, the diagnostic and clinical approach occurred on an as-needed basis (Wilson et al., 1997), usually as one part of a broad range of psychological services. The contribution of mental health experts to investigations took shape when various police services asked whether clinical interpretations of unknown offenders might help in identification and apprehension (Canter, 1989). Even though other methods have come to the fore, largely eclipsing these early contributions, at the time of publication, Copson (1995) claimed that over half of the profiling done in the United Kingdom was by psychologists and psychiatrists using a clinical approach. In an early study of the range of services offered by police psychologists, Bartol (1996) found

that, on average, 2% of the total monthly workload of in-house psychologists was spent on profiling, and that 3.4% of the monthly workload of part-time consultants was spent on profiling. Interestingly, despite diagnostic evaluations being among the earliest approaches, research on the attitudes of clinical practitioners revealed scepticism of profiling as a whole. For example, Bartol (1996) found that 70% of those questioned did not feel comfortable giving this advice, and felt that the practice was questionable. What is more (Bartol, 1996, p. 79):

One well-known police psychologist with more than 20 years of experience in the field, considered criminal profiling ‘virtually pointless and dangerous’. Many of the respondents wrote that much more research needs to be done before the process becomes a useful tool.

Torres et al. (2006) show similar disdain for the practice. Of the 161 survey respondents, 10% had profiling experience, and 25% considered themselves knowledgeable of the practice. Less than 25% considered the practice to have sufficient scientific reliability or validity. However, despite this, many respondents also considered profiling a useful tool for law enforcement. In examining their role in profiling, McGrath (2001, p. 321) suggests that clinicians may be well suited to the profiling process, owing to the following reasons:

- Their background in the behavioural sciences and their training in psychopathology place them in an enviable position to deduce personality and behavioural characteristics from crime scene information.
- The forensic psychiatrist is in a good position to infer the meaning behind signature behaviours.
- Given their training, education, and focus on critical and analytical thinking, the forensic psychiatrist is in a

good position to ‘channel their training into a new field’.

Despite supporting this role, McGrath (2001) also notes that the clinician should be careful not to get caught up in, or focus too heavily on, treatment issues. This role confusion may come about because those conducting diagnostic evaluations may not often be exposed to the needs and wants of investigations, having little experience in reviewing crime scene data or witness depositions (West, 2000). However, the diagnostic evaluation approach to profiling has largely changed since these empirical studies were conducted during the 1990s through to the early 2000s. There has been an uprising in specialised police roles requiring registration as a psychiatrist or psychologist along with knowledge or experience in law enforcement investigations (e.g. see below a description of behavioural investigative advice). Consequently, the clinical and diagnostic approach to profiling is now embedded in specialised police positions, rather than in general forensic psychology and psychiatry practice.

Investigative psychology

Investigative psychology (IP) employs scientific research and is largely dependent on the empirical analysis conducted on individual crime types. Because IP relies more on empirical research than other inductive methods, strengths of this approach to practice are evident. However, a considerable issue in the use of applying this process to developing a criminal profile is the potential variance that may arise between profilers in determining the details of the crime and the applicability of relevant or suitable research. Furthermore, reliance on research may mean that crimes of extreme violence or low frequency may not be adequately researched to base a profile on. As with CIA, IP identifies profiling as only one

part of an overall approach (Canter, 2000, p. 1091):

The domain of investigative psychology covers all aspects of psychology that are relevant to the conduct of criminal and civil investigations. Its focus is on the ways in which criminal activities may be examined and understood in order for the detection of crime to be effective and legal proceedings to be appropriate. As such, investigative psychology is concerned with psychological input to the full range of issues that relate to the management, investigation and prosecution of crime.

Canter (2011) discussed the action–characteristics equation, whereby crime scene actions are followed by a process of deriving inferences, resulting in the identification of offender characteristics. The stage of inference development employs empirical procedures and a conceptually driven approach to establish actions and characteristics. The inference process seeks to examine interpersonal style, emotions, intellect, knowledge and familiarity, and skills. Upon analysis, conclusions are provided regarding the salience of the crime, case linkage, offender characteristics and based location. At the cornerstone of the IP approach to profiling is advanced statistical modelling and facet theory, forming both the empirical and conceptual approaches to IP practice (Canter & Youngs, 2003; Davis et al., 2018). However, although IP empirical research has provided a substantial contribution to profiling and investigating the nuanced aspects of offending, there is contention in regard to whether IP constitutes an individual approach to profiling, or instead an essential step in the provision of a profile (Davis et al., 2018; Rainbow et al., 2014; Snook et al., 2010).

Behavioural evidence analysis

The literature on behavioural evidence analysis (BEA) identifies that when rigorously applied

to a criminal investigation the method aims to be largely deductive in nature; however, it should be noted that an absence of universal principles in the behavioural sciences renders this more an ideal than a reality. Additionally, given the reliance of deductive logic on inductive theories and the scientific method, it would be wrong to classify the method as wholly deductive. The theory of BEA states that conclusions about the offender should not be rendered unless specific physical evidence (based on a detailed crime reconstruction) exists. In BEA, the profiler spends a great deal of time establishing the veracity and validity of the physical evidence and its relationship to the criminal event. Indeed, this focus on detail is listed by some as a problem with the practice, specifically that deductive approaches are time consuming and provide limited information to investigators (see Holmes & Holmes, 2002).

Like many approaches, BEA is composed of steps or stages. The first, *forensic analysis*, refers to the examination, testing and interpretation of any and all physical evidence (Petherick & Turvey, 2008). To be able to understand any behavioural evidence, a full and complete reckoning of the physical evidence must be undertaken. *Victimology*, the second stage, examines any and all victim-related information such as height, sex, age, hobbies, habits and routines. Information derived during this stage can also help determine victim risk and target selection. *Crime scene characteristics* seeks to establish the distinguishing features of the crime scene, including the method of approach and attack, the method of control, location type, nature and sequence of any sexual acts, materials used, precautionary acts and verbal activity (Petherick & Turvey, 2008).

Offender characteristics, the final stage, assesses all of the above information for themes that collectively suggest personality or behavioural characteristics of the offender. In contrast to other approaches, BEA proposes a smaller number of characteristics that can be definitively established, including knowledge

of the victim, knowledge of the crime scene, knowledge of methods and materials, criminal skill and motive (see Petherick, 2014a).

Behavioural investigative advice

In the early 2000s, a new method of supporting police investigation known as behavioural investigative advice (BIA) emerged in the United Kingdom. The BIA discipline seeks to offer a broad range of psychological and scientific assistance to police investigations, including, but not limited to offender profiling (Rainbow et al., 2014). The role of BIAs is to offer senior investigative officers extra support and enhance their decision making during serious crime investigations through the use of behavioural science theory, research and expertise (Davis et al., 2018). The use of BIAs to assist investigations is considered to be positive and an essential step in incorporating specialised expertise into policing. However, in considering offender profiling, it is unclear as to the processes that BIAs use in assisting investigations and developing profiles. It would seem that BIA is a distinct profession, rather than a variation in profiling practice (Davis et al., 2018). Although research presented by BIAs has proposed the use of decision-making models (see Alison et al., 2003) to reach profile conclusions, the standards of evidence required for a BIA to develop a profile appears varied. An example of the decision making employed in BIA profiles was provided by Alison et al. (2003) who proposed the application of Toulmin's (1958) philosophy of argument. The principles of applying this structure of argument to profiling was due to 'the need for the justificatory functioning of substantive argument, whilst also being aware of the limitations of formal deductive, decontextualized logic for practical, 'real world' issues' (Alison et al., 2003, p. 174). In applying these principles to derive a profile, a profile statement must be derived from backing, warrant, grounds, modality and the consideration of rebuttal. The application of structured argument and evidence-based consideration in

a profile is considered to be paramount to scientific practice and demonstrates support for the BIA discipline. BIA appears to be a progressive approach to criminal profiling and has received empirical recognition through a developing body of research (Alison et al., 2010; Almond et al., 2011; Marshall & Alison, 2011). For example, studies have reported positive police satisfaction with BIA involvement in cases and recommendations (Almond et al., 2011; Cole & Brown, 2011). The development of BIA practice is considered promising for both profiling and investigative assistance; however, the discipline would benefit from further scientific scrutiny in relation to operational approaches. The use of principles to derive a structured argument is essential in profiling, yet the development of a supported argument is only part of the required decision-making processes for producing a profile, with considerable degree and variation possible without a standardised practice framework. BIA is a progressive discipline, although subject to fallibility without process prioritisation and practice uniformity.

Towards integrated practice in criminal profiling

The variation across profiling practices has resulted in inconsistencies emerging in relation to the reliance on evidence, conclusions provided and the investigative utility of profiles (Almond et al., 2011; Fox et al., 2020). This has ranged from profiles providing statements without justification or the possibility of falsification, being derived predominantly on research conclusions, dismissing inconsistencies in a case, preferencing typology characteristics, omitting victimology evidence, selectively reporting confirmatory evidence, being provided verbally and without documentation, and failing to evaluate all case materials (Almond et al., 2011; Morton et al., 2014; Petherick & Brooks, 2014; Petherick & Ferguson, 2010; Turvey, 2012; Wilson et al., 1997). Each approach is characterised by

strengths and weakness. For example, the linking of crime scene evidence with valid conclusions as evident in the BEA method provides scientific efficacy; however, this method can also be limiting, offering a narrow profile and minimal investigate assistance. According to Alison et al. (2003), the success of a profile is dependent on the types of conclusions provided, rather than the method used to derive these. For substantiated conclusions in profiles, there must be evidence of logical argument and pragmatic utility, ensuring conclusions are both logical and practical (Alison et al., 2010; Almond et al., 2011). Any conclusion/statement provided in a profile must have grounding, warrant, veracity and the capacity for falsification consistent with principles of the structure of argument (Toulmin, 1958). The grounding of the argument must be supported by scientific knowledge, whilst the warrant of the argument must permit this to be demonstrated in specialised research. In relation to veracity, there must be a form of specification in regard to the likelihood or probability of the claim occurring, whilst falsification must be possible, ensuring that that the statement or claim can be tested or disproven (Alison et al., 2003; Toulmin, 1958). Along with the profiles being derived from evidence and grounded in logical conclusions, statistical regularities between the types of offence and the types of offender characteristics can offer further investigative utility (Fox et al., 2020). As Fox and Farrington (2018) state, ‘all future profiles should be developed using a solid empirical approach that relies on advanced statistical analysis of large data sets’ (p. 1263). Consequently, it appears that the discipline of criminal profiling would benefit from an integrated approach to practice that provides a framework for the provision of profiles. An integrated framework serves to support the strengths of each methodology, whilst providing a structured guide to profile development. The current issues pertaining to profiling are akin to the limitations identified with the early generation of

psychological risk assessments, with a need to integrate empirical findings, practitioner expertise and processes of practice. The issues in the field of risk assessment resulted in adjustments to practice and the development of a new generation of assessment instruments known as structured professional judgments (SPJs; Cooper et al., 2008; Davis & Ogloff, 2008; Gormley & Petherick, 2015). The introduction of SPJs has permitted an integrative approach to risk assessment, assimilating the scientific basis of the actuarial approach along with the benefits of the clinical approach. In accordance with the need for integrated practice in criminal profiling, a structural framework is proposed, represented by the acronym CRIME. The CRIME framework seeks to overcome the pitfalls of singular profiling approaches and instead provide a structured framework for profile development, incorporating the strengths of each of the examined practices, whilst acknowledging the limitations and weakness of utilising a specific process. This framework is similar to other recommendations and is based upon a similar philosophy to that of at least the works of Davis and Bennett (2016) and Ackley (2017).

- C – Crime scene evaluations
- R – Relevancy of research
- I – Investigative or clinical opinion
- M – Methods of investigation
- E – Evaluation

The CRIME framework is centred on a tiered process of profile development. The first tier, *crime scene evaluations*, relies largely on the crime scene and the evidence present to determine justifications. Consistent with a BEA approach, conclusions cannot be reached without the presence of evidence at the crime scene indicating that a set behaviour or event has occurred. This tier is considered to carry primary significance in the profile, accompanied by the other tiers, which provide additional information of assistance to investigations. At this first phase, evaluations are determined in respect to crime scene

evidence, victimology and offender behaviour. The second tier, *relevancy of research*, is intended to provide investigators with an overview of research on similar offending behaviour, noting factors of relevance in similar crimes and characteristics that have been found on these occasions. This step must specify the limitations of relying on this research and instead seek to provide education and background on the offending matter. The third tier, *investigative or clinical opinion*, is considered to carry less weight and should be included in profiles with caution. This may include investigators' unique understanding of factors such as access of local areas, criminal trends or past victim patterns. These factors are provided in the profile as suggestions and knowledge that may be of note for investigators to consider and review during the investigative processes. This information is considered of lower investigative relevance and not based in fact. The penultimate stage and tier of the CRIME framework is *methods of investigation*. This stage aims to provide detailed implications arising from the aforementioned steps, indicating avenues for investigators to explore and offering techniques of investigation and advice in relation to the suspect. The final stage is *evaluation*, and involves a critical examination of the profile itself, the logic, reasoning and sequencing used to arrive at the profile, and any input the investigators have about the document. This also includes an evaluation of the profile in light of new information or evidence that has come to light since the profile was generated, along with a peer review of the profile before this is provided to the consumer.

An example of the application of the CRIME framework to the below scenario (adapted from Aydin & Dirilen-Gumus, 2011, p. 2615–2616; Douglas et al., 1986, p. 416) is as follows:

At 3.00 pm a young woman's nude body was discovered on the roof top of an apartment building where she was living. The female had been extensively beaten to her face, and she

had been strangled with the bag strap that belonged to her purse. Her nipples had been cut off after her death, and these had been placed on her chest. On the inside of her thigh in ink, were the words, 'You can't stop me'. On her abdomen, the words, 'Fuck you' were scrawled on this section of her body. The pendant that was usually worn by the woman, a Jewish sign (Chai) for good luck, was missing from around her neck. The missing pendant was presumed taken by the murderer. Her nylon stockings had been removed and loosely tied around her wrists and ankles near a railing, with her underpants pulled over her face. The crime scene revealed that the victim's earrings that she had been wearing were placed symmetrically on either side of her head. An umbrella and ink pen had been inserted into the woman's vagina and a hair comb was placed into her pubic hairs. Her jaw and nose had been broken, her molars were loosened, and due to the blunt force trauma, she had sustained multiple face fractures. The cause of death was determined to be asphyxia by ligature (purse strap) strangulation. There were also post-mortem bite marks on the victim's thighs, along with several contusions, haemorrhages and lacerations to the body. The killer had defecated on the roof top and this was covered with the victims' clothing.

The preliminary police reports revealed that another resident of the apartment building, a white male, aged 15 years, had discovered the victim's wallet. The young male discovered the wallet in the stairwell between the third and fourth floors at approximately 8.20 am, keeping the wallet with him until he returned home from school for lunch that afternoon. Upon returning home, he gave the wallet to his father, a white male, aged 40 years. After receiving the wallet, the father went to the victim's apartment at 2.50 pm and handed this to the victim's mother whom she resided with. The mother contacted the day-care centre to inform her daughter about the wallet; however, upon contacting the centre, she learnt that her daughter had not appeared

for work that morning. The mother, the victim's sister and a neighbour began searching the building. Shortly afterwards they discovered the body, and the neighbour called the police. Initial investigations by police revealed that no witnesses had seen the victim after she left her apartment that morning.

The investigation revealed that the victim was a 26-year-old, 4'11", 90-lb, white female. The victim resided with her mother and father in the apartment building. She awoke around 6.30 am on the day of her murder, dressed, had breakfast (consisting of coffee and juice) and left for work. The woman worked at a near-by day-care centre, where she was employed as a group teacher for handicapped children. When she would leave for work in the morning, she would often alternate between taking the elevator or walking down the stairs, depending on her mood. She had a slight curvature of the spine (kyphoscoliosis) and was a shy and quiet woman. The medical examiner's report revealed that there was no semen in the victim's vagina, but semen was detected on the victim's body. There were visible bite marks on the victim's thigh and knee area and the murderer had cut the victim's nipples with a knife after she was deceased and written on her body. The stab wounds that she had sustained were not deep. The examination concluded that the cause of death was strangulation, first manual, then ligature, with the strap of her purse.

While the challenges of developing a profile based on a short scenario are evident, the outline in [Table 1](#) of the integrated CRIME framework details a summary of how the steps may be initially formed and subsequently utilised. The profile should start with an overview of the crime and the details, before integrating the CRIME steps. Upon completion of the five steps, the practitioner producing the profile should summarise the information and provide a review of the importance of the information provided within the profile, again emphasising the reliance of evidence-based information in the profile,

Table 1. CRIME profile development.

Crime scene evaluations

- Perpetrator able to access building without being identified or noticed as being out of place.
- Evidence of mutilation to the body.
- Significant overkill in perpetration of crime.
- Perpetrator had significant time to commit serious of acts in crime.
- Sexual arousal.
- Perpetrator had manipulated body and crime scene.
- Reasonable physical strength and mobility required to commit crime.
- Use of objects present at the crime scene (victim's belongings) to perpetrate murder.
- No attempt to cover up DNA evidence.
- Words carved into the body may represent an attempt to communicate with either the victim, law enforcement, another individual, or himself. Alternatively, staging of crime scene should be considered.

Summary of crime scene evaluations:

The victim's morning routine, while structured and regular, did not involve a consistent pattern of leaving her residence. As such, a perpetrator would not know whether she would walk down the stairs or catch the elevator. That nature of the crime therefore indicates a blitz attack, with the crime indicating that the offender did not have a pre-determined plan to kill the victim, as indicated by strangulation with her bag strap. Further, while it may have been due to timing that the perpetrator was not recognised in the building, it must be considered that the perpetrator was able to access the building and not appear out of place. The behaviours of the perpetrator indicate both sexual and violent motivations, with both patterns of behaviour evident. Significant violence was used in committing the crime, including mutilation of the body post-mortem. The offender was sexually aroused at the crime scene and able to ejaculate to a mutilated and bloodied female body, indicating that sexual excitement was obtained from the murder. There are a range of differential diagnoses or explanations to account for this sexualised violence, ranging from sexual arousal towards the victim, through to paraphilic conditions such as sexual sadism or haematophilia (sexual fetish for blood). The perpetrator made no attempt to cover his DNA (e.g. semen and faeces). The role of defecating at the crime scene remains unclear, whether this was linked to fantasy, anxiety or other motives. The post-mortem behaviour by the offender, while partially a possible attempt to stage the crime scene, also involved targeted mutilation of breast and genital areas. This is considered to be an action above and beyond the need of a sexual crime, indicating excessive fixation and emotional disturbance.

Relevancy of research

- Provide an overview of the relationship between mutilation of the body and sex crimes, including offender characteristics.
- Sexual crimes involving defecation.
- Post-mortem behaviour in sexual crimes.
- Strangulation as a means to murder.

Investigative or clinical opinion

This area may depend on the investigators or experts involved in the case, topics may include:

- Past sexual offenders in the local area.
- Similar instances of body mutilation.
- Theories of defecation in sexual crimes.

Methods of investigation

- Interview all residents residing in apartment building and seek to eliminate on DNA.
 - Develop a log of visitors who frequent building regularly and seek to exclude.
 - Examine any other crimes that have occurred in the building, such as break and enter offences.
- Exclude as suspects.
-

(Continued)

- Complete thorough analysis of victim's life, excluding former boyfriends.
- Examine previous sexual crimes in region with significant violence and that are unsolved.

Evaluation

- Review any additional information that may be missing from the profile, such as forensic reports that have been completed yet not supplied.
 - Summarise key information contained with the profile, placing the strongest emphasis on evidence-based conclusions.
 - Undertake peer consultation and/or review in relation to the profile or the recommendations made before releasing the written document.
-

from both the standing research corpus and crime scene evidence.

Not only is this approach useful for providing as holistic an understanding of the case as possible, undertaking the CRIME framework may also serve as a bootstrapping process for other types of advice investigators may request as a natural extension of the assistance. For example, having a deep understanding of the crimes of a serial criminal may assist with the process of case linkage where one attempts to link previously unlinked cases to one offender or offender group. Similarly, the profiler/analyst may be able to provide insight into risk assessment of a serial or other offender to determine the likelihood that they will escalate or graduate to other crimes, such as from a sex offender to a killer.

Recommendations and conclusion

For profiling to develop as a discipline, greater scientific rigor is required, with profiles needing to incorporate logic and reasoning that are supported by appropriate evidence and justification. Criminal profiling must have investigative utility, assisting investigations, rather than creating confusion or misleading cases. Secondly, for profiling to advance there must be a move towards scientific practice, with uniformity across the field essential for admissibility in court (Freckelton, 2008) should the profiler/analyst be appropriately qualified for such endeavours. Although profiling is intended to develop investigative hypotheses, given the progression towards evidence-based

policing, some proponents have suggested that for profiling to constitute a scientific method, court and legal admissibility is essential (Bosco et al., 2010; Freckelton, 2008; Petherick & Brooks, 2014). Currently, profiling regularly fails to add probative value to cases, and instead is considered to have a greater prejudicial effect (Bosco et al., 2010). One of the central challenges to profiling meeting admissibility standards in courts has been due to the inconsistencies in practice, with large discrepancies observed across approaches and methods of practice. The reliance on singular methods appears largely problematic, failing to consider the strengths of other profiling modalities, while also exposing investigations to the fragility of a sole method approach.

For profiling to develop as a forensic science and ultimately have admissibility in court, the discipline must be reliable, subject to peer review and scientific publication, be generally accepted amongst fellow practitioners, have guiding or governing standards, have identifiable error rates, and be implemented only in appropriate and applicable cases (Bosco et al., 2010). Subsequently, it is proposed that a joint methodology be employed when constructing criminal profiles, focusing on the strengths of each profiling approach and establishing uniformity in practice standards. It is suggested that this approach form the CRIME framework, consisting of crime scene evaluations, relevancy of research, investigative or clinical opinions, methods of investigation and evaluation. The CRIME approach provides a framework to promote the scientific practice of

profiling, aiming to assist in the reliability of the practice by detailing a standardised process of developing profiles. It is intended that through the CRIME framework profiles will encompass error rates, specified in the crime scene evaluation and relevancy of research stages, whilst the evaluation stage seeks to incorporate peer review and consultation into practice. For profile to continue as a discipline, systemisation and evidence-based practice is required. Although the CRIME framework is not the ultimate solution to developing a 'gold standard' in criminal profiling, the approach seeks to promote integration and unity in practice, an essential first step in establishing practice consistency. It is recommended that future research seek to explore the benefit of profiles derived through the framework, reviewing the consistency and emergence of evidence-based practice. This could be investigated through police satisfaction, profile accuracy and the evidence of reasoning underpinning profiles derived through the CRIME framework. The future of profiling is dependent on the discipline progressing towards science, and integrated practice is the first fundamental step (Fox & Farrington, 2018).

Ethical standards

Declaration of conflicts of interest

Wayne Petherick has declared no conflicts of interest

Nathan Brooks has declared no conflicts of interest

Informed consent

The article does not contain any studies with human participants or animals performed by any of the authors.

ORCID

Wayne Petherick  <http://orcid.org/0000-0002-7323-8680>

Nathan Brooks  <http://orcid.org/0000-0003-1784-099X>

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